

SEQUENCE LISTING

<110> Kaia Palm
Tonis Timmusk
CeMines Research

<120> MAMMALIAN NEURALIZED FAMILY OF
TRANSCRIPTION REGULATORS AND USES THEREFOR

<130> CEMRES.001A

<160> 48

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 1725

<212> DNA

<213> Homo sapien

<400> 1

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 Gly Leu Gly Gln Trp Ser Asp Glu Cys Thr Ile Cys Tyr Glu His Ala
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<213> Homo sapien

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 <212> PRT
 <213> Homo sapien

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 35 40 45
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 65 70 75 80
 Arg Pro Val Leu Ile Tyr Glu Gln Val Arg Leu Lys Ile Thr Lys Lys
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 Gln Cys Cys Trp Ser Gly Ala Leu Arg Leu Gly Phe Thr Ser Lys Asp
 100 105 110
 Pro Ser Arg Ile His Pro Asp Ser Leu Pro Lys Tyr Ala Cys Pro Asp
 115 120 125
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 Ala Asn Glu Gly Asn Ile Ala Phe Trp Val Asp Lys Lys Gly Arg
 145 150 155 160
 Val Phe His Arg Ile Asn Asp Ser Ala Val Met Leu Phe Phe Ser Gly
 165 170 175
 Val Arg Thr Ala Asp Pro Leu Trp Ala Leu Val Asp Val Tyr Gly Leu
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 225 230 235 240
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 Glu Arg Ala Leu Val Phe Thr Ser Arg Pro Val Arg Val Ala Glu Thr
 305 310 315 320
 Ile Phe Val Lys Val Thr Arg Ser Gly Gly Ala Arg Pro Gly Ala Leu
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 Ser Phe Gly Val Thr Thr Cys Asp Pro Gly Thr Leu Arg Pro Ala Asp
 340 345 350
 Leu Pro Phe Ser Pro Glu Ala Leu Val Asp Arg Lys Glu Phe Trp Ala
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1620
1674

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 420 425 430
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 485 490 495
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<212> PRT
<213> Homo sapien

<400> 6

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Cys Asp Leu Asn Val Pro Gly Ala Asp Gly Asp Glu Ala Ala Pro Ala
65           70           75           80
Ala Gly Cys Pro Ile Pro Gln Asn Ser Leu Asn Ser Gln His Ser Arg
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Arg Pro Gly Ala Leu Ser Phe Gly Val Thr Thr Cys Asp Pro Gly Thr
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Leu Arg Pro Ala Asp Leu Pro Phe Ser Pro Glu Ala Leu Val Asp Arg
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Lys Glu Phe Trp Ala Val Cys Arg Val Pro Gly Pro Leu His Ser Gly
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Ile Leu Gly Ser Thr Ile Leu Ala Glu Arg Gly Ile Pro Ser Leu Pro
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Cys Ser Pro Ala Ser Thr Pro Thr Ser Pro Ser Ala Leu Gly Ser Arg
          275          280          285
Leu Ser Asp Pro Leu Leu Ser Thr Cys Ser Ser Gly Pro Leu Gly Ser
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Ser Ala Gly Gly Thr Ala Pro Asn Ser Pro Val Ser Leu Pro Glu Ser
305          310          315          320
Pro Val Thr Pro Gly Leu Gly Gln Trp Ser Asp Glu Cys Thr Ile Cys
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Tyr Glu His Ala Val Asp Thr Val Ile Tyr Thr Cys Gly His Met Cys
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Leu Cys Tyr Ala Cys Gly Leu Arg Leu Lys Lys Ala Leu His Ala Cys
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 <212> PRT
 <213> mouse

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 Cys Pro Pro Thr Leu Ser Gly Gly Gly Leu Pro Ala Thr Pro Leu Leu
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 Phe His Pro His Thr Lys Gly Ser Gln Ile Leu Met Asp Leu Ser His
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Val Asp Thr Val Ile Tyr Thr Cys Gly His Met Cys Leu Cys Tyr Ser
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 <211> 557
 <212> PRT
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Ala Pro Asn Ser Pro Val Ser Leu Pro Glu Ser Pro Val Thr Pro Gly
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Leu Gly Gln Trp Ser Asp Glu Cys Thr Ile Cys Tyr Glu His Ala Val
500 505 510
Asp Thr Val Ile Tyr Thr Cys Gly His Met Cys Leu Cys Tyr Ser Cys
515 520 525
Gly Leu Arg Leu Lys Lys Ala Leu His Ala Cys Cys Pro Ile Cys Arg
530 535 540
Arg Pro Ile Lys Asp Ile Ile Lys Thr Tyr Arg Ser Ser
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<210> 11
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<212> DNA
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Cys Pro Pro Thr Leu Ser Gly Gly Gly Leu Pro Ala Thr Pro Leu Leu
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Phe His Pro His Thr Lys Gly Ser Gln Ile Leu Met Asp Leu Ser His
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Lys Ala Val Lys Arg Gln Ala Ser Phe Cys Asn Ala Ile Thr Phe Ser
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Asn Arg Pro Val Leu Ile Tyr Glu Gln Val Arg Leu Lys Ile Thr Lys
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 Lys Gln Cys Cys Trp Ser Gly Ala Leu Arg Leu Gly Phe Thr Ser Lys
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 Asp Pro Ser Arg Ile His Pro Asp Ser Leu Pro Lys Tyr Ala Cys Pro
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 Asp Leu Val Ser Gln Ser Gly Phe Trp Ala Lys Ala Leu Pro Glu Glu
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 Phe Ala Asn Glu Gly Asn Ile Ile Ala Phe Trp Val Asp Lys Lys Gly
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 Gly Val Arg Thr Val Asp Pro Leu Trp Ala Leu Val Asp Val Tyr Gly
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 Ser Gly Pro Leu Gly Gly Ser Ala Gly Gly Thr Ala Pro Asn Ser Pro
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 Val Ser Leu Pro Glu Ser Pro Val Thr Pro Gly Leu Gly Gln Trp Ser
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 Thr Cys Gly His Met Cys Leu Cys Tyr Ser Cys Gly Leu Arg Leu Lys
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<400> 14

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| Ser | Arg | Ala | Ser | Arg | Gly | His | Pro | Gln | Asn | Leu | Lys | Glu | Ser | Ile | Gly |
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| Gly | Ser | Phe | Pro | Val | Pro | Ser | His | Arg | Cys | His | His | Lys | Gln | Lys | His |
| | | 35 | | | | | 40 | | | | | 45 | | | |
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| Phe | His | Pro | His | Thr | Lys | Gly | Ser | Gln | Ile | Leu | Met | Asp | Leu | Ser | His |
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| Lys | Ala | Val | Lys | Arg | Gln | Ala | Ser | Phe | Cys | Asn | Ala | Ile | Thr | Phe | Ser |
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| Asn | Arg | Pro | Val | Leu | Ile | Tyr | Glu | Gln | Val | Arg | Leu | Lys | Ile | Thr | Lys |
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| Phe | Ala | Asn | Glu | Gly | Asn | Ile | Ile | Ala | Phe | Trp | Val | Asp | Lys | Lys | Gly |
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| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Cys | Tyr | Glu | His | Ala | Val | Asp | Thr | Val | Ile | Tyr | Thr | Cys | Gly | His | Met |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Cys | Leu | Cys | Tyr | Ser | Cys | Gly | Leu | Arg | Leu | Lys | Lys | Ala | Leu | His | Ala |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Cys | Cys | Pro | Ile | Cys | Arg | Arg | Pro | Ile | Lys | Asp | Ile | Ile | Lys | Thr | Tyr |
| | | 275 | | | | | 280 | | | | | 285 | | | |
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<211> 574

<212> PRT

<213> rat

<400> 16

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| Ser | Arg | Ala | Ser | Arg | Gly | His | Pro | Gln | Asn | Leu | Lys | Asp | Ser | Ile | Gly |
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| Ser | Ser | Phe | Pro | Val | Pro | Ser | His | Arg | Cys | His | His | Lys | Gln | Lys | His |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Cys | Pro | Pro | Ala | Leu | Ser | Gly | Gly | Gly | Leu | Pro | Ala | Thr | Pro | Leu | Leu |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Phe | His | Pro | His | Thr | Lys | Gly | Ser | Gln | Ile | Leu | Met | Asp | Leu | Ser | His |
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| Lys | Ala | Val | Lys | Arg | Gln | Ala | Ser | Phe | Cys | Asn | Ala | Ile | Thr | Phe | Ser |
| | | | 85 | | | | | 90 | | | | | 95 | | |
| Asn | Arg | Pro | Val | Leu | Ile | Tyr | Glu | Gln | Val | Arg | Leu | Lys | Ile | Thr | Lys |
| | | 100 | | | | | 105 | | | | | 110 | | | |
| Lys | Gln | Cys | Cys | Trp | Ser | Gly | Ala | Leu | Arg | Leu | Gly | Phe | Thr | Ser | Lys |
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| Asp | Pro | Ser | Arg | Ile | His | Pro | Asp | Ser | Leu | Pro | Lys | Tyr | Ala | Cys | Pro |
| | 130 | | | | 135 | | | | | | 140 | | | | |
| Asp | Leu | Val | Ser | Gln | Ser | Gly | Phe | Trp | Ala | Lys | Ala | Leu | Pro | Glu | Glu |
| 145 | | | | 150 | | | | | 155 | | | | | 160 | |
| Phe | Ala | Asn | Glu | Gly | Asn | Ile | Ile | Ala | Phe | Trp | Val | Asp | Lys | Lys | Gly |

| | | | | | | | | | | | | | | | | | |
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| | | | | 165 | | | | | 170 | | | | | 175 | | | |
| Arg | Val | Phe | Tyr | Arg | Ile | Asn | Glu | Ser | Ala | Ala | Met | Leu | Phe | Phe | Ser | | |
| | | | 180 | | | | | | 185 | | | | 190 | | | | |
| Gly | Val | Arg | Thr | Ala | Asp | Pro | Leu | Trp | Ala | Leu | Val | Asp | Val | Tyr | Gly | | |
| | | 195 | | | | | 200 | | | | | 205 | | | | | |
| Leu | Thr | Arg | Gly | Val | Gln | Leu | Leu | Asp | Ser | Glu | Leu | Val | Leu | Pro | Asp | | |
| | 210 | | | | | 215 | | | | | 220 | | | | | | |
| Cys | Leu | Arg | Pro | Arg | Ser | Phe | Thr | Ala | Leu | Arg | Arg | Pro | Ser | Leu | Arg | | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | | |
| Cys | Glu | Ala | Asp | Glu | Ala | Arg | Leu | Ser | Val | Ser | Leu | Cys | Asp | Leu | Asn | | |
| | | | 245 | | | | | | 250 | | | | | 255 | | | |
| Val | Pro | Gly | Ala | Asp | Gly | Glu | Asp | Gly | Ala | Pro | Pro | Ala | Gly | Cys | Pro | | |
| | | 260 | | | | | | 265 | | | | | 270 | | | | |
| Ile | Pro | Gln | Asn | Ser | Leu | Asn | Ser | Gln | His | Ser | Arg | Ala | Leu | Pro | Ala | | |
| | 275 | | | | | 280 | | | | | | 285 | | | | | |
| Gln | Leu | Asp | Gly | Asp | Leu | Arg | Phe | His | Ala | Leu | Arg | Ala | Arg | Ala | Gln | | |
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| Val | Arg | Ile | Leu | Asp | Glu | Gln | Thr | Val | Ala | Arg | Leu | Glu | His | Gly | Arg | | |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 | | |
| Asp | Glu | Arg | Ala | Leu | Val | Phe | Thr | Ser | Arg | Pro | Val | Arg | Val | Ala | Glu | | |
| | | | 325 | | | | | | 330 | | | | | 335 | | | |
| Thr | Ile | Phe | Ile | Lys | Val | Thr | Arg | Ser | Gly | Gly | Ala | Arg | Pro | Glu | Ala | | |
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| Leu | Ser | Phe | Gly | Val | Thr | Thr | Cys | Asp | Pro | Gly | Thr | Leu | Arg | Pro | Ala | | |
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| Asp | Leu | Pro | Phe | Ser | Pro | Glu | Ala | Leu | Val | Asp | Arg | Lys | Glu | Phe | Trp | | |
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| Ala | Val | Cys | Arg | Val | Pro | Gly | Pro | Leu | His | Ser | Gly | Asp | Ile | Leu | Gly | | |
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| Leu | Val | Val | Asn | Ala | Asp | Gly | Lys | Leu | His | Leu | Ile | His | Asn | Gly | Ala | | |
| | | | 405 | | | | | | 410 | | | | | 415 | | | |
| Pro | Ala | Gly | Met | Gln | Leu | Cys | Val | Asp | Ala | Ser | Gln | Pro | Leu | Trp | Met | | |
| | | 420 | | | | | | 425 | | | | | 430 | | | | |
| Leu | Phe | Ser | Leu | His | Gly | Ala | Ile | Thr | Gln | Val | Arg | Ile | Leu | Gly | Ser | | |
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| Thr | Ile | Met | Ala | Glu | Arg | Gly | Gly | Pro | Ser | Leu | Pro | Cys | Ser | Pro | Ala | | |
| | 450 | | | | | 455 | | | | | | 460 | | | | | |
| Ser | Thr | Pro | Thr | Ser | Pro | Ser | Ala | Leu | Gly | Ser | Arg | Leu | Ser | Asp | Pro | | |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 | | |
| Leu | Leu | Ser | Thr | Cys | Gly | Ser | Gly | Pro | Leu | Gly | Gly | Ser | Val | Gly | Gly | | |
| | | | 485 | | | | | | 490 | | | | | 495 | | | |
| Thr | Ala | Pro | Asn | Ser | Pro | Val | Ser | Leu | Pro | Glu | Ser | Pro | Val | Thr | Pro | | |
| | | 500 | | | | | | 505 | | | | | 510 | | | | |
| Gly | Leu | Gly | Gln | Trp | Ser | Asp | Glu | Cys | Thr | Ile | Cys | Tyr | Glu | His | Ala | | |
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| Val | Asp | Thr | Val | Ile | Tyr | Thr | Cys | Gly | His | Met | Cys | Leu | Cys | Tyr | Ser | | |
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| Cys | Gly | Leu | Arg | Leu | Lys | Ala | Leu | His | Ala | Cys | Cys | Pro | Ile | Cys | | | |
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<212> DNA

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<400> 17

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<211> 344

<212> PRT

<213> rat

<400> 18

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Cys Pro Pro Ala Leu Ser Gly Gly Gly Leu Pro Ala Thr Pro Leu Leu
50 55 60
Phe His Pro His Thr Lys Gly Ser Gln Ile Leu Met Asp Leu Ser His
65 70 75 80
Lys Ala Val Lys Arg Gln Ala Ser Phe Cys Asn Ala Ile Thr Phe Ser
85 90 95
Asn Arg Pro Val Leu Ile Tyr Glu Gln Val Arg Leu Lys Ile Thr Lys
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Lys Gln Cys Cys Trp Ser Gly Ala Leu Arg Leu Gly Phe Thr Ser Lys
115 120 125
Asp Pro Ser Arg Ile His Pro Asp Ser Leu Pro Lys Tyr Ala Cys Pro
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Asp Leu Val Ser Gln Ser Gly Phe Trp Ala Lys Ala Leu Pro Glu Glu
145 150 155 160
Phe Ala Asn Glu Gly Asn Ile Ile Ala Phe Trp Val Asp Lys Lys Gly
165 170 175
Arg Val Phe Tyr Arg Ile Asn Glu Ser Ala Ala Met Leu Phe Phe Ser
180 185 190
Gly Val Arg Thr Ala Asp Pro Leu Trp Ala Leu Val Asp Val Tyr Gly
195 200 205
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 260 265 270
 Val Ser Leu Pro Glu Ser Pro Val Thr Pro Gly Leu Gly Gln Trp Ser
 275 280 285
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 Thr Cys Gly His Met Cys Leu Cys Tyr Ser Cys Gly Leu Arg Leu Lys
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 <211> 295
 <212> PRT
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<400> 20
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 35 40 45
 Cys Pro Pro Ala Leu Ser Gly Gly Gly Leu Pro Ala Thr Pro Leu Leu

| | | | | | |
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| Phe His Pro His Thr Lys Gly Ser Gln Ile Leu Met Asp Leu Ser His | | | | | |
| 65 | | 70 | | 75 | 80 |
| Lys Ala Val Lys Arg Gln Ala Ser Phe Cys Asn Ala Ile Thr Phe Ser | | | | | |
| | 85 | | 90 | | 95 |
| Asn Arg Pro Val Leu Ile Tyr Glu Gln Val Arg Leu Lys Ile Thr Lys | | | | | |
| | 100 | | 105 | | 110 |
| Lys Gln Cys Cys Trp Ser Gly Ala Leu Arg Leu Gly Phe Thr Ser Lys | | | | | |
| | 115 | | 120 | | 125 |
| Asp Pro Ser Arg Ile His Pro Asp Ser Leu Pro Lys Tyr Ala Cys Pro | | | | | |
| | 130 | | 135 | | 140 |
| Asp Leu Val Ser Gln Ser Gly Phe Trp Ala Lys Ala Leu Pro Glu Glu | | | | | |
| 145 | | 150 | | 155 | 160 |
| Phe Ala Asn Glu Gly Asn Ile Ile Ala Phe Trp Val Asp Lys Lys Gly | | | | | |
| | 165 | | 170 | | 175 |
| Arg Val Phe Tyr Arg Ile Asn Glu Ser Ala Ala Met Leu Phe Phe Ser | | | | | |
| | 180 | | 185 | | 190 |
| Gly Val Arg Thr Ala Asp Pro Leu Trp Ala Leu Val Asp Val Tyr Gly | | | | | |
| | 195 | | 200 | | 205 |
| Leu Thr Arg Gly Val Gln Leu Leu Gly Thr Ala Pro Asn Ser Pro Val | | | | | |
| | 210 | | 215 | | 220 |
| Ser Leu Pro Glu Ser Pro Val Thr Pro Gly Leu Gly Gln Trp Ser Asp | | | | | |
| 225 | | 230 | | 235 | 240 |
| Glu Cys Thr Ile Cys Tyr Glu His Ala Val Asp Thr Val Ile Tyr Thr | | | | | |
| | 245 | | 250 | | 255 |
| Cys Gly His Met Cys Leu Cys Tyr Ser Cys Gly Leu Arg Leu Lys Lys | | | | | |
| | 260 | | 265 | | 270 |
| Ala Leu His Ala Cys Cys Pro Ile Cys Arg Arg Pro Ile Lys Asp Ile | | | | | |
| | 275 | | 280 | | 285 |
| Ile Lys Thr Tyr Arg Ser Ser | | | | | |
| | 290 | | 295 | | |

<210> 21
 <211> 1675
 <212> DNA
 <213> Homo sapien

<400> 21
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 cggcgcaaca gcttctgcaa tggcgtcacg ttcacgcagc ggcccatccg gctgtacgag 240
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atctgccggc ggcccatcaa ggacgtcatt aagatctaca ggccatagcc tagcc 1675

<210> 22

<211> 555

<212> PRT

<213> Homo sapien

<400> 22

Met Gly Asn Thr Val His Arg Thr Leu Pro Asp Pro Ser Pro Pro Ala
1 5 10 15
Arg Leu Leu Ala Thr Arg Pro Cys Cys Gly Pro Gly Pro Glu Arg Arg
20 25 30
Pro Val Leu Gly Glu Ala Pro Arg Phe His Ala Gln Ala Lys Gly Lys
35 40 45
Asn Val Arg Leu Asp Gly His Ser Arg Arg Ala Thr Arg Arg Asn Ser
50 55 60
Phe Cys Asn Gly Val Thr Phe Thr Gln Arg Pro Ile Arg Leu Tyr Glu
65 70 75 80
Gln Val Arg Leu Arg Leu Val Ala Val Arg Pro Gly Trp Ser Gly Ala
85 90 95
Leu Arg Phe Gly Phe Thr Ala His Asp Pro Ser Leu Met Ser Ala Gln
100 105 110
Asp Ile Pro Lys Tyr Ala Cys Pro Asp Leu Val Thr Arg Pro Gly Tyr
115 120 125
Trp Ala Lys Ala Leu Pro Glu Asn Leu Ala Leu Arg Asp Thr Val Leu
130 135 140
Ala Tyr Trp Ala Asp Arg His Gly Arg Val Phe Tyr Ser Val Asn Asp
145 150 155 160
Gly Glu Pro Val Leu Phe His Cys Gly Val Ala Val Gly Gly Pro Leu
165 170 175
Trp Ala Leu Ile Asp Val Tyr Gly Ile Thr Asp Glu Val Gln Leu Leu
180 185 190
Glu Ser Ala Phe Ala Asp Thr Leu Thr Pro Ala Arg Leu Ser Gln Ala
195 200 205
Arg Phe Ser Ala Cys Leu Pro Pro Ser Ser His Asp Ala Ala Asn Phe
210 215 220
Asp Asn Asn Glu Leu Glu Asn Asn Gln Val Val Ala Lys Leu Gly His
225 230 235 240
Leu Ala Leu Gly Arg Ala Pro Gly Pro Pro Pro Ala Asp Ala Ala Ala
245 250 255
Ala Ala Ile Pro Cys Gly Pro Arg Glu Arg Pro Arg Pro Ala Ser Ser
260 265 270
Pro Ala Leu Leu Glu Ala Asp Leu Arg Phe His Ala Thr Arg Gly Pro
275 280 285

Asp Val Ser Leu Ser Ala Asp Arg Lys Val Ala Cys Ala Pro Arg Pro
 290 295 300
 Asp Gly Gly Arg Thr Leu Val Phe Ser Glu Arg Pro Leu Arg Pro Gly
 305 310 315 320
 Glu Ser Leu Phe Val Glu Val Gly Arg Pro Gly Leu Ala Ala Pro Gly
 325 330 335
 Ala Leu Ala Phe Gly Ile Thr Ser Cys Asp Pro Gly Val Leu Arg Pro
 340 345 350
 Asn Glu Leu Pro Ala Asp Pro Asp Ala Leu Leu Asp Arg Lys Glu Tyr
 355 360 365
 Trp Val Val Ala Arg Ala Gly Pro Val Pro Ser Gly Gly Asp Ala Leu
 370 375 380
 Ser Phe Thr Leu Arg Pro Gly Gly Asp Val Leu Leu Gly Ile Asn Gly
 385 390 395 400
 Arg Pro Arg Gly Arg Leu Leu Cys Val Asp Thr Thr Gln Ala Leu Trp
 405 410 415
 Ala Phe Phe Ala Val Arg Gly Gly Val Ala Gly Gln Leu Arg Leu Leu
 420 425 430
 Gly Thr Leu Gln Ser Ser Pro Ala Thr Thr Thr Pro Ser Gly Ser Leu
 435 440 445
 Ser Gly Ser Gln Asp Asp Ser Asp Ser Asp Met Thr Phe Ser Val Asn
 450 455 460
 Gln Ser Ser Ser Ala Ser Glu Ser Ser Leu Val Thr Ala Pro Ser Ser
 465 470 475 480
 Pro Leu Ser Pro Pro Val Ser Pro Val Phe Ser Pro Pro Glu Pro Ala
 485 490 495
 Gly Ile Lys Asn Gly Glu Cys Thr Val Cys Phe Asp Gly Glu Val Asp
 500 505 510
 Thr Val Ile Tyr Thr Cys Gly His Met Cys Leu Cys His Ser Cys Gly
 515 520 525
 Leu Arg Leu Lys Arg Gln Ala Arg Ala Cys Cys Pro Ile Cys Arg Arg
 530 535 540
 Pro Ile Lys Asp Val Ile Lys Ile Tyr Arg Pro
 545 550 555

<210> 23
 <211> 1129
 <212> DNA
 <213> Homo sapien

<400> 23
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 aacttcgaca acaacgagct cgagaacaac caggtggtgg ccaagctggg ccacctggcg 180
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 ccccgtagac gcccgcggcc cgcgtcgtcg ccggcgctac tggaggccga cctgcgcttc 300
 cacgcaacac gcgggcccga cgtgagcctg tcggccgacc gcaaagtggc ctgcgaccg 360
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 tgcacgggtgt gcttcgatgg cgaggtggac acggtcatct acacgtgtgg acacatgtgc 1020
 ctgtgccaca gctgcggcct gcggctcaag cgacaggccc gggcctgctg ccccatctgc 1080
 cggcgggcca tcaaggacgt cattaagatc tacaggccat agcctagcc 1129

<210> 24
 <211> 373
 <212> PRT
 <213> Homo sapien

<400> 24
 Met Gly Asn Thr Val His Arg Thr Leu Pro Glu Ser Ala Phe Ala Asp
 1 5 10 15
 Thr Leu Thr Pro Ala Arg Leu Ser Gln Ala Arg Phe Ser Ala Cys Leu
 20 25 30
 Pro Pro Ser Ser His Asp Ala Ala Asn Phe Asp Asn Asn Glu Leu Glu
 35 40 45
 Asn Asn Gln Val Val Ala Lys Leu Gly His Leu Ala Leu Gly Arg Ala
 50 55 60
 Pro Gly Pro Pro Pro Ala Asp Ala Ala Ala Ala Ile Pro Cys Gly
 65 70 75 80
 Pro Arg Glu Arg Pro Arg Pro Ala Ser Ser Pro Ala Leu Leu Glu Ala
 85 90 95
 Asp Leu Arg Phe His Ala Thr Arg Gly Pro Asp Val Ser Leu Ser Ala
 100 105 110
 Asp Arg Lys Val Ala Cys Ala Pro Arg Pro Asp Gly Gly Arg Thr Leu
 115 120 125
 Val Phe Ser Glu Arg Pro Leu Arg Pro Gly Glu Ser Leu Phe Val Glu
 130 135 140
 Val Gly Arg Pro Gly Leu Ala Ala Pro Gly Ala Leu Ala Phe Gly Ile
 145 150 155 160
 Thr Ser Cys Asp Pro Gly Val Leu Arg Pro Asn Glu Leu Pro Ala Asp
 165 170 175
 Pro Asp Ala Leu Leu Asp Arg Lys Glu Tyr Trp Val Val Ala Arg Ala
 180 185 190
 Gly Pro Val Pro Ser Gly Gly Asp Ala Leu Ser Phe Thr Leu Arg Pro
 195 200 205
 Gly Gly Asp Val Leu Leu Gly Ile Asn Gly Arg Pro Arg Gly Arg Leu
 210 215 220
 Leu Cys Val Asp Thr Thr Gln Ala Leu Trp Ala Phe Phe Ala Val Arg
 225 230 235 240
 Gly Gly Val Ala Gly Gln Leu Arg Leu Leu Gly Thr Leu Gln Ser Ser
 245 250 255
 Pro Ala Thr Thr Pro Ser Gly Ser Leu Ser Gly Ser Gln Asp Asp
 260 265 270
 Ser Asp Ser Asp Met Thr Phe Ser Val Asn Gln Ser Ser Ser Ala Ser
 275 280 285
 Glu Ser Ser Leu Val Thr Ala Pro Ser Ser Pro Leu Ser Pro Pro Val
 290 295 300
 Ser Pro Val Phe Ser Pro Pro Glu Pro Ala Gly Ile Lys Asn Gly Glu
 305 310 315 320
 Cys Thr Val Cys Phe Asp Gly Glu Val Asp Thr Val Ile Tyr Thr Cys
 325 330 335

Gly His Met Cys Leu Cys His Ser Cys Gly Leu Arg Leu Lys Arg Gln
340 345 350
Ala Arg Ala Cys Cys Pro Ile Cys Arg Arg Pro Ile Lys Asp Val Ile
355 360 365
Lys Ile Tyr Arg Pro
370

<210> 25
<211> 955
<212> DNA
<213> Homo sapien

<400> 25
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ttccacgcgc aggccaaagg caagaacgtg cggctggacg gccactcgcg ccgggccaca 180
cggcgcaaca gcttctgcaa tggcgtcacg ttcacgcagc ggcccatccg gctgtacgag 240
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ggcgagtgca cgggtgtgctt cgatggcgag gtggacacgg tcatctacac gtgtggacac 840
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<210> 26
<211> 315
<212> PRT
<213> Homo sapien

<400> 26
Met Gly Asn Thr Val His Arg Thr Leu Pro Asp Pro Ser Pro Pro Ala
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Arg Leu Leu Ala Thr Arg Pro Cys Cys Gly Pro Gly Pro Glu Arg Arg
20 25 30
Pro Val Leu Gly Glu Ala Pro Arg Phe His Ala Gln Ala Lys Gly Lys
35 40 45
Asn Val Arg Leu Asp Gly His Ser Arg Arg Ala Thr Arg Arg Asn Ser
50 55 60
Phe Cys Asn Gly Val Thr Phe Thr Gln Arg Pro Ile Arg Leu Tyr Glu
65 70 75 80
Gln Val Arg Leu Arg Leu Val Ala Val Arg Pro Gly Trp Ser Gly Ala
85 90 95
Leu Arg Phe Gly Phe Thr Ala His Asp Pro Ser Leu Met Ser Ala Gln
100 105 110
Asp Ile Pro Lys Tyr Ala Cys Pro Asp Leu Val Thr Arg Pro Gly Tyr
115 120 125
Trp Ala Lys Ala Leu Pro Glu Asn Leu Ala Leu Arg Asp Thr Val Leu
130 135 140

Ala Tyr Trp Ala Asp Arg His Gly Arg Val Phe Tyr Ser Val Asn Asp
145 150 155 160
Gly Glu Pro Val Leu Phe His Cys Gly Val Ala Val Gly Gly Pro Leu
165 170 175
Trp Ala Leu Ile Asp Val Tyr Gly Ile Thr Asp Glu Val Gln Leu Leu
180 185 190
Gly Thr Leu Gln Ser Ser Pro Ala Thr Thr Thr Pro Ser Gly Ser Leu
195 200 205
Ser Gly Ser Gln Asp Asp Ser Asp Ser Asp Met Thr Phe Ser Val Asn
210 215 220
Gln Ser Ser Ser Ala Ser Glu Ser Ser Leu Val Thr Ala Pro Ser Ser
225 230 235 240
Pro Leu Ser Pro Pro Val Ser Pro Val Phe Ser Pro Pro Glu Pro Ala
245 250 255
Gly Ile Lys Asn Gly Glu Cys Thr Val Cys Phe Asp Gly Glu Val Asp
260 265 270
Thr Val Ile Tyr Thr Cys Gly His Met Cys Leu Cys His Ser Cys Gly
275 280 285
Leu Arg Leu Lys Arg Gln Ala Arg Ala Cys Cys Pro Ile Cys Arg Arg
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Pro Ile Lys Asp Val Ile Lys Ile Tyr Arg Pro
305 310 315

<210> 27

<211> 1641

<212> DNA

<213> Rat

<400> 27

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355 360 365
 Pro Ser Gly Gly Asp Ala Leu Ser Phe Thr Leu Arg Pro Gly Gly Asp
 370 375 380
 Val Leu Leu Ala Val Asn Gly Arg Pro Arg Gly Arg Leu Leu Cys Val
 385 390 395 400
 Asp Thr Ser Gln Ala Leu Trp Ala Phe Phe Ala Val Arg Gly Gly Val
 405 410 415
 Ala Gly Gln Leu Arg Leu Leu Gly Thr Val Gln Ser Gly Pro Glu Ala
 420 425 430
 Thr Thr Pro Ser Gly Ser Phe Ser Gly Ser Gln Asp Asp Ser Asp Ser
 435 440 445
 Asp Met Thr Phe Gly Val Asn Gln Ser Ser Ser Ala Ser Glu Ser Ser
 450 455 460
 Leu Val Thr Ala Pro Ser Ser Pro Leu Ser Pro Pro Val Ser Pro Ala
 465 470 475 480
 Phe Ser Ala Pro Glu Pro Ala Gly Ser Arg Asn Gly Glu Cys Thr Val
 485 490 495
 Cys Phe Asp Ser Glu Val Asp Thr Val Ile Tyr Thr Cys Gly His Met
 500 505 510
 Cys Leu Cys His Ser Cys Arg Leu Arg Leu Arg Lys Gln Ala Arg Ala
 515 520 525
 Cys Cys Pro Ile Cys Arg Arg Pro Ile Lys Asp Val Ile Lys Ile Tyr
 530 535 540
 Arg Pro
 545

<210> 29
 <211> 789
 <212> DNA
 <213> Homo sapien

<400> 29
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 cgcaccacgt tccacgacgg catcgtgttc agccagcggc cgggtgcgct gggcgagcgt 180
 gtggcgctgc gagtgtgctg ggaggagagc ggctggtgct gcggcctccg cgtgggcttc 240
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 gagtgtgcca tctgcttcta tcacgctgcc aacaccgcgc ttgtgccctg cggccacaca 660
 tacttctgca gatactgtgc ctggcgggtc ttcagcgata cggccaagtg ccctgtgtgc 720
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 ggctcatga 789

<210> 30
 <211> 262
 <212> PRT
 <213> Homo sapien

<400> 30
 Met Gly Ala Gln Leu Cys Phe Glu Ala Asn Ala Lys Ala Pro Arg Glu

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 Ala Leu Arg Phe His Ala Glu Ala Lys Gly Ala Gln Val Arg Leu Asp
 20 25 30
 Thr Arg Gly Cys Ile Ala His Arg Arg Thr Thr Phe His Asp Gly Ile
 35 40 45
 Val Phe Ser Gln Arg Pro Val Arg Leu Gly Glu Arg Val Ala Leu Arg
 50 55 60
 Val Leu Arg Glu Glu Ser Gly Trp Cys Gly Gly Leu Arg Val Gly Phe
 65 70 75 80
 Thr Arg Leu Asp Pro Ala Cys Val Ser Val Pro Ser Leu Pro Pro Phe
 85 90 95
 Leu Cys Pro Asp Leu Glu Glu Gln Ser Pro Thr Trp Ala Ala Val Leu
 100 105 110
 Pro Glu Gly Cys Ala Leu Thr Gly Asp Leu Val Arg Phe Trp Val Asp
 115 120 125
 Arg Arg Gly Cys Leu Phe Ala Lys Val Asn Ala Gly Cys Arg Leu Leu
 130 135 140
 Leu Arg Glu Gly Val Pro Val Gly Ala Pro Leu Trp Ala Val Met Asp
 145 150 155 160
 Val Tyr Gly Thr Thr Lys Ala Ile Glu Leu Leu Asp Pro Thr Ala Ser
 165 170 175
 Arg Leu Pro Thr Pro Met Pro Trp Asp Leu Ser Asn Lys Ala Val Pro
 180 185 190
 Glu Pro Lys Ala Thr Pro Gly Glu Cys Ala Ile Cys Phe Tyr His
 195 200 205
 Ala Ala Asn Thr Arg Leu Val Pro Cys Gly His Thr Tyr Phe Cys Arg
 210 215 220
 Tyr Cys Ala Trp Arg Val Phe Ser Asp Thr Ala Lys Cys Pro Val Cys
 225 230 235 240
 Arg Trp Gln Ile Glu Ala Val Ala Pro Ala Gln Gly Pro Pro Ala Leu
 245 250 255
 Arg Val Glu Glu Gly Ser
 260

<210> 31

<211> 765

<212> DNA

<213> mouse

<400> 31

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 aatgtgggtc gcttctgggt gaaccgtaga ggggtggctc tcgccaaggc caacgctggc 420
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 gagtggtgct tagtgtcttc actgaaggct gaggaaggct cctga 765

<210> 32
 <211> 254
 <212> PRT
 <213> mouse

<400> 32
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 Ala Leu Ser Phe His Gly Asn Ala Thr Gly Ala Gln Val His Leu Asp
 20 25 30
 Asp Gln Arg Ser Thr Ala Arg Arg Arg Ser Thr Phe His Asp Gly Ile
 35 40 45
 Val Phe Ser Gln Arg Pro Val Trp Pro Gly Glu Arg Val Ala Leu Arg
 50 55 60
 Val Leu Arg His Glu Glu Gly Trp Cys Gly Gly Leu Arg Val Gly Phe
 65 70 75 80
 Thr Arg Leu Asp Pro Ala Gln Val Ala Ala Ser Cys Leu Pro Pro Phe
 85 90 95
 Val Cys Pro Asp Leu Glu Glu Gln Ser Pro Thr Trp Ala Ala Leu Leu
 100 105 110
 Pro Glu Gly Phe Val Arg Ala Gly Asn Val Val Cys Phe Trp Val Asn
 115 120 125
 Arg Arg Gly Trp Leu Phe Ala Lys Val Asn Ala Gly Arg Pro Leu Leu
 130 135 140
 Leu Arg Lys Asp Val Leu Val Gln Gly Ala Pro Leu Trp Ala Val Met
 145 150 155 160
 Asp Val Tyr Gly Thr Thr Lys Ala Ile Glu Leu Leu Asp Pro Lys Ala
 165 170 175
 Asn Ala Trp Ile Arg Ser Gly Glu Pro Val Pro Glu Ser Glu Val Ile
 180 185 190
 Ser Gly Glu Glu Cys Val Ile Cys Phe His Asn Thr Ala Asn Thr Arg
 195 200 205
 Leu Met Pro Cys Gly His Ser His Phe Cys Gly Ser Cys Ala Trp His
 210 215 220
 Ile Phe Lys Asp Thr Ala Arg Cys Pro Ile Cys Arg Trp Gln Ile Glu
 225 230 235 240
 Glu Val Ala Val Val Ser Ser Leu Lys Ala Glu Glu Gly Ser
 245 250

<210> 33
 <211> 250
 <212> DNA
 <213> Homo sapien

<400> 33
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 cgcgtggaga gcttcgcca cggcgtgtgc ttcagccgcg agccgctggc cccggggccag 120
 gtcttcctgg tcgagatcga ggagaaagag ctgggctggg gcggacatct gcgtctcggg 180
 ctgaccgcgc tggacccgc cagtctggcc cccgttcccg agttttctct gcccgatctg 240
 gtcaacctgg 250

<210> 34
 <211> 83
 <212> PRT

<213> Homo sapien

<400> 34

Arg Phe His Arg Val His Gly Ala Asn Ile Arg Val Asp Pro Ser Gly
1 5 10 15
Thr Arg Ala Thr Arg Val Glu Ser Phe Ala His Gly Val Cys Phe Ser
20 25 30
Arg Glu Pro Leu Ala Pro Gly Gln Val Phe Leu Val Glu Ile Glu Glu
35 40 45
Lys Glu Leu Gly Trp Cys Gly His Leu Arg Leu Gly Leu Thr Ala Leu
50 55 60
Asp Pro Ala Ser Leu Ala Pro Val Pro Glu Phe Ser Leu Pro Asp Leu
65 70 75 80
Val Asn Leu

<210> 35

<211> 1743

<212> DNA

<213> rat

<400> 35

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gcgttgcatc tactgaagag tggctgcagc cctgcggttc agattaaaat tgcagaatta 180
tacagacgcc gataccacag gacacttgaa ggactttctg atctatccac aatcaaactc 240
tcagttttca gtttgatgg tagctcatca ccagtagagc ctgacttggc cgtggctggg 300
atccactcgt tgccttctac ttccattgca cctcattcac cgtcatctcc tgtcgcttct 360
gtgctgcttc aagacactaa gcccacgttt gagatgcagc aaccatctcc tcccattcct 420
cctgtccatc ctgacgtgca gttaaaaacg ctgcccttct atgacgtcct tgatgttctc 480
atcaagccca caagtttagt tcaaagcagt attcagcggg ttcaagagaa gttttttatt 540
tttgctttga caccacagca agttagagag atatgcattt caagggattt tttgccaggg 600
ggcaggagag actacacagt ccaagtcagc ctgcgacttt gcttggcaga gaccagttgc 660
cctcaagaag ataactatcc caatagtttg tgtataaaag taaatgggaa actctttcct 720
ttgcctggct atgcaccacc acctaaaaat gggatcgaa agaaagcgtc tggacgcccc 780
ctgaatatta catctttagt gagattgtct tcagctgtgc caaatcagat ttctatttct 840
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gtgtcgagca tgtcatcaga tttgccaggg ttggattttc tttcccttat tccagttgat 1680
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tga 1743

<210> 36

<211> 580

<212> PRT

<213> rat

<400> 36

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20 25 30
Arg Lys His Asp Leu Leu Met Arg Ala Leu His Leu Leu Lys Ser Gly
35 40 45
Cys Ser Pro Ala Val Gln Ile Lys Ile Arg Glu Leu Tyr Arg Arg Arg
50 55 60
Tyr Pro Arg Thr Leu Glu Gly Leu Ser Asp Leu Ser Thr Ile Lys Ser
65 70 75 80
Ser Val Phe Ser Leu Asp Gly Ser Ser Ser Pro Val Glu Pro Asp Leu
85 90 95
Ala Val Ala Gly Ile His Ser Leu Pro Ser Thr Ser Ile Ala Pro His
100 105 110
Ser Pro Ser Ser Pro Val Ala Ser Val Leu Leu Gln Asp Thr Lys Pro
115 120 125
Thr Phe Glu Met Gln Gln Pro Ser Pro Pro Ile Pro Pro Val His Pro
130 135 140
Asp Val Gln Leu Lys Thr Leu Pro Phe Tyr Asp Val Leu Asp Val Leu
145 150 155 160
Ile Lys Pro Thr Ser Leu Val Gln Ser Ser Ile Gln Arg Phe Gln Glu
165 170 175
Lys Phe Phe Ile Phe Ala Leu Thr Pro Gln Gln Val Arg Glu Ile Cys
180 185 190
Ile Ser Arg Asp Phe Leu Pro Gly Gly Arg Arg Asp Tyr Thr Val Gln
195 200 205
Val Gln Leu Arg Leu Cys Leu Ala Glu Thr Ser Cys Pro Gln Glu Asp
210 215 220
Asn Tyr Pro Asn Ser Leu Cys Ile Lys Val Asn Gly Lys Leu Phe Pro
225 230 235 240
Leu Pro Gly Tyr Ala Pro Pro Pro Lys Asn Gly Ile Glu Gln Lys Arg
245 250 255
Pro Gly Arg Pro Leu Asn Ile Thr Ser Leu Val Arg Leu Ser Ser Ala
260 265 270
Val Pro Asn Gln Ile Ser Ile Ser Trp Ala Ser Glu Ile Gly Lys Asn
275 280 285
Tyr Ser Met Ser Val Tyr Leu Val Arg Gln Leu Thr Ser Ala Met Leu
290 295 300
Leu Gln Arg Leu Lys Met Lys Gly Ile Arg Asn Pro Asp His Ser Lys
305 310 315 320
Ala Leu Ile Lys Glu Lys Leu Thr Ala Asp Pro Asp Ser Glu Ile Ala
325 330 335
Thr Thr Ser Leu Arg Val Ser Leu Met Cys Pro Leu Gly Lys Met Arg
340 345 350
Leu Thr Ile Pro Cys Arg Ala Val Thr Cys Thr His Leu Gln Cys Phe
355 360 365
Asp Ala Ala Leu Tyr Leu Gln Met Asn Glu Lys Lys Pro Thr Trp Ile
370 375 380
Cys Pro Val Cys Asp Lys Lys Ala Ala Tyr Glu Ser Leu Ile Leu Asp
385 390 395 400

Gly Leu Phe Met Glu Ile Leu Asn Asp Cys Ser Asp Val Asp Glu Ile
 405 410 415
 Lys Phe Gln Glu Asp Gly Ser Trp Cys Pro Met Arg Pro Lys Lys Glu
 420 425 430
 Ala Met Lys Val Thr Ser Gln Pro Cys Thr Lys Val Glu Ser Ser Ser
 435 440 445
 Val Phe Ser Lys Pro Cys Ser Val Thr Val Ala Ser Asp Ala Ser Lys
 450 455 460
 Lys Lys Ile Asp Val Ile Asp Leu Thr Ile Glu Ser Ser Ser Asp Glu
 465 470 475 480
 Glu Glu Asp Pro Pro Ala Lys Arg Lys Cys Ile Phe Met Ser Glu Thr
 485 490 495
 Gln Ser Ser Pro Thr Lys Gly Val Leu Met Tyr Gln Pro Ser Ser Val
 500 505 510
 Arg Val Pro Ser Val Thr Ser Val Asp Pro Ala Ala Ile Pro Pro Ser
 515 520 525
 Leu Thr Asp Tyr Ser Val Pro Phe His His Thr Pro Val Ser Ser Met
 530 535 540
 Ser Ser Asp Leu Pro Gly Leu Asp Phe Leu Ser Leu Ile Pro Val Asp
 545 550 555 560
 Pro Gln Ser His Leu Thr Leu Asn Ser Lys Gln Tyr Val Cys His His
 565 570 575
 His Gln Pro Pro
 580

<210> 37
 <211> 1251
 <212> DNA
 <213> Homo sapien

<400> 37
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 cagaagggtc actgtgccta tggaactcgg tgcatagatg accacacgag gccctctgct 180
 gcagctggag gtgctgtggg caccatggcc cacagtgtgc cctccccagc tttccacagt 240
 cctcaccctc cttccgaggt cactgcatcc attgtgaaaa ctaactcaca tgaacccgga 300
 aagcgtgaaa agagaacatt ggttcttaga gaccgaaatc tctctggcat ggctgaaagg 360
 aagaccgagc cgagcatggt gagtaatcca ggcagctgca gcgaccccca gccagcccc 420
 gagatgaagc cgcattccta cctggatgcc atcaggagtg gccttgatga cgtggaggcc 480
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 gaacacgaga tggaaaaggc ctttgccttc caggcaagcc aggacaaaagt gtgcagtatc 720
 tgcatggaag tgatcctgga gaaggcctct gcttctgaga ggagatttgg gattctctcc 780
 aattgcaatc acacgtactg tttgtcctgc atccggcagt ggcgggtgtgc cgaacagttt 840
 gaaaacccaa tcattaagtc ttgtccagaa tgccgtgtga tatcagagtt tgtaattcca 900
 agtgtgtatt ggggtggaaga tcagaataaaa aagaacgagt tgattgaagc tttcaaacag 960
 gggatgggga aaaaagcctg taaatacttt gagcaaggca aggggacctg cccatttggga 1020
 agcaaatgct tttatcgcca tgcttacctc gatgggcggc tagcagagcc tgagaaacct 1080
 cggaacagc tcagtcttca aggcactgtg aggttcttta attcagtgcg gctctgggat 1140
 ttcacgaga accgagaaag ccggcatgtc cccaacaatg aagatgtcga catgacagag 1200
 ctcggggacc tcttcatgca cctttctgga gtggaatcat cagaacccta a 1251

<210> 38

<211> 416
 <212> PRT
 <213> Homo sapien

<400> 38

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Thr | Lys | Gln | Ile | Thr | Cys | Arg | Tyr | Phe | Met | His | Gly | Val | Cys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Arg | Glu | Gly | Ser | Gln | Cys | Leu | Phe | Ser | His | Asp | Leu | Ala | Asn | Ser | Lys |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Pro | Ser | Thr | Ile | Cys | Lys | Tyr | Tyr | Gln | Lys | Gly | Tyr | Cys | Ala | Tyr | Gly |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Thr | Arg | Cys | Arg | Tyr | Asp | His | Thr | Arg | Pro | Ser | Ala | Ala | Ala | Gly | Gly |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Ala | Val | Gly | Thr | Met | Ala | His | Ser | Val | Pro | Ser | Pro | Ala | Phe | His | Ser |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
| Pro | His | Pro | Pro | Ser | Glu | Val | Thr | Ala | Ser | Ile | Val | Lys | Thr | Asn | Ser |
| | | | | 85 | | | | | 90 | | | | | 95 | |
| His | Glu | Pro | Gly | Lys | Arg | Glu | Lys | Arg | Thr | Leu | Val | Leu | Arg | Asp | Arg |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Asn | Leu | Ser | Gly | Met | Ala | Glu | Arg | Lys | Thr | Gln | Pro | Ser | Met | Val | Ser |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Asn | Pro | Gly | Ser | Cys | Ser | Asp | Pro | Gln | Pro | Ser | Pro | Glu | Met | Lys | Pro |
| | 130 | | | | | 135 | | | | | 140 | | | | |
| His | Ser | Tyr | Leu | Asp | Ala | Ile | Arg | Ser | Gly | Leu | Asp | Asp | Val | Glu | Ala |
| 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| Ser | Ser | Ser | Tyr | Ser | Asn | Glu | Gln | Gln | Leu | Cys | Pro | Tyr | Ala | Ala | Ala |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Gly | Glu | Cys | Arg | Phe | Gly | Asp | Ala | Cys | Val | Tyr | Leu | His | Gly | Glu | Val |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Cys | Glu | Ile | Cys | Arg | Leu | Gln | Val | Leu | His | Pro | Phe | Asp | Pro | Glu | Gln |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Arg | Lys | Ala | His | Glu | Lys | Ile | Cys | Met | Leu | Thr | Phe | Glu | His | Glu | Met |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Glu | Lys | Ala | Phe | Ala | Phe | Gln | Ala | Ser | Gln | Asp | Lys | Val | Cys | Ser | Ile |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Cys | Met | Glu | Val | Ile | Leu | Glu | Lys | Ala | Ser | Ala | Ser | Glu | Arg | Arg | Phe |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Gly | Ile | Leu | Ser | Asn | Cys | Asn | His | Thr | Tyr | Cys | Leu | Ser | Cys | Ile | Arg |
| | | 260 | | | | | | 265 | | | | | 270 | | |
| Gln | Trp | Arg | Cys | Ala | Glu | Gln | Phe | Glu | Asn | Pro | Ile | Ile | Lys | Ser | Cys |
| | 275 | | | | | | 280 | | | | | | 285 | | |
| Pro | Glu | Cys | Arg | Val | Ile | Ser | Glu | Phe | Val | Ile | Pro | Ser | Val | Tyr | Trp |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Val | Glu | Asp | Gln | Asn | Lys | Lys | Asn | Glu | Leu | Ile | Glu | Ala | Phe | Lys | Gln |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| Gly | Met | Gly | Lys | Lys | Ala | Cys | Lys | Tyr | Phe | Glu | Gln | Gly | Lys | Gly | Thr |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Cys | Pro | Phe | Gly | Ser | Lys | Cys | Leu | Tyr | Arg | His | Ala | Tyr | Pro | Asp | Gly |
| | | 340 | | | | | | 345 | | | | | 350 | | |
| Arg | Leu | Ala | Glu | Pro | Glu | Lys | Pro | Arg | Lys | Gln | Leu | Ser | Ser | Gln | Gly |
| | | 355 | | | | | 360 | | | | | 365 | | | |
| Thr | Val | Arg | Phe | Phe | Asn | Ser | Val | Arg | Leu | Trp | Asp | Phe | Ile | Glu | Asn |
| | 370 | | | | | 375 | | | | | 380 | | | | |
| Arg | Glu | Ser | Arg | His | Val | Pro | Asn | Asn | Glu | Asp | Val | Asp | Met | Thr | Glu |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 |

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 405 410 415

<210> 39
 <211> 738
 <212> DNA
 <213> Homo sapien

<400> 39
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 aagcggatac gggccaccac tctcctggaa ggtggcttcc gaggctctgg cttcatcatg 180
 tgcagcggca aagagaaccc ggacagtgat gctgacttgg atgtggatgg ggatgacact 240
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 cctggtgaag ccaaggagag agaggcactt cggggcgcag tcctaaatgg cggccctccc 360
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 aatggtgaaa gcagcaagca ggaggccatg cagaagacct gcaagaacag cgacatcgag 480
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 tcgatgcccc taacgtccat ccagtgttgg cacgtgcact gcgaggagtg ctggctgcgg 660
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 cggaggatct acttgtga 738

<210> 40
 <211> 245
 <212> PRT
 <213> Homo sapien

<400> 40
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 20 25 30
 Glu Glu Tyr Glu Trp Cys Gly Gln Lys Arg Ile Arg Ala Thr Thr Leu
 35 40 45
 Leu Glu Gly Gly Phe Arg Gly Ser Gly Phe Ile Met Cys Ser Gly Lys
 50 55 60
 Glu Asn Pro Asp Ser Asp Ala Asp Leu Asp Val Asp Gly Asp Asp Thr
 65 70 75 80
 Leu Glu Tyr Gly Lys Pro Gln Tyr Thr Glu Ala Asp Val Ile Pro Cys
 85 90 95
 Thr Gly Glu Glu Pro Gly Glu Ala Lys Glu Arg Glu Ala Leu Arg Gly
 100 105 110
 Ala Val Leu Asn Gly Gly Pro Pro Ser Thr Arg Ile Thr Pro Glu Phe
 115 120 125
 Ser Lys Trp Ala Ser Asp Glu Met Pro Ser Thr Ser Asn Gly Glu Ser
 130 135 140
 Ser Lys Gln Glu Ala Met Gln Lys Thr Cys Lys Asn Ser Asp Ile Glu
 145 150 155 160
 Lys Ile Thr Glu Asp Ser Ala Val Thr Thr Phe Glu Ala Leu Lys Ala
 165 170 175
 Arg Val Arg Glu Leu Glu Arg Gln Leu Ser Arg Gly Asp Arg Tyr Lys
 180 185 190
 Cys Leu Ile Cys Met Asp Ser Tyr Ser Met Pro Leu Thr Ser Ile Gln

195 200 205
 Cys Trp His Val His Cys Glu Glu Cys Trp Leu Arg Thr Leu Gly Ala
 210 215 220
 Lys Lys Leu Cys Pro Gln Cys Asn Thr Ile Thr Ala Pro Gly Asp Leu
 225 230 235 240
 Arg Arg Ile Tyr Leu
 245

<210> 41
 <211> 1425
 <212> DNA
 <213> Homo sapien

<400> 41
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 gatttgccac agaatttcaa gatatttgtg agcggcaatt caaatgagtg tctccagaat 180
 agtggctttg aatacaccat ttgctttctg cctccacttg tgctgaactt tgaactgcca 240
 ccagattatc catcctcttc cccaccttca ttcacactta gtggcaaagt gctgtcacca 300
 actcagctat ctgctctatg caagcactta gacaacctat gggaagaaca ccgtggcagc 360
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 gtctctcctt ttgagctcaa gatttggtct cagaaaaaag tgcagagaag gacagctcaa 480
 gcttctccca acacagagct agattttgga ggagctgctg gatctgatgt agaccaagag 540
 gaaattgtgg atgagagagc agtgcaggat gtggaatcac tgtcaaactt gatccaggaa 600
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 agtatctgtt tctgtgagaa gctgggtagt gaatgcatgt acttcttggg gtgcaggcat 720
 gtgtactgca aagcctgtct gaaggactac tttgaaatcc agatcagaga tggccagggt 780
 caatgcctca actgcccaga accaaagtgc ccttcggtgg ccactcctgg tcagggtcaa 840
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 gaacctgggt gcacctgggt tatctgctcc agctgcaatt ttgccttctg tactttgtgc 1020
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 aagagagtga ttcagaaggc actggaagag atggaaaagta aggagtgggt agagaagaac 1200
 tcaaagagct gccatgttg tggaactccc atagagaaat tagacggatg taacaagatg 1260
 acatgtactg gctgtatgca atatttctgt tggatttgca tgggttctct ctctagagca 1320
 aacccttaca aacatttcaa tgaccctggg tcaccatggt ttaaccgggt gttttatgct 1380
 gtggatgttg acgacgatat ttgggaagat gaggtagaag actag 1425

<210> 42
 <211> 474
 <212> PRT
 <213> Homo sapien

<400> 42
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 Ala Ser Ile Tyr Asp Gly Asp Glu Phe Arg Lys Ala Glu Ser Val Gln
 20 25 30
 Gly Gly Glu Thr Arg Ile Tyr Leu Asp Leu Pro Gln Asn Phe Lys Ile
 35 40 45
 Phe Val Ser Gly Asn Ser Asn Glu Cys Leu Gln Asn Ser Gly Phe Glu
 50 55 60
 Tyr Thr Ile Cys Phe Leu Pro Pro Leu Val Leu Asn Phe Glu Leu Pro

<212> PRT
<213> Artificial Sequence

<220>
<223> nuclear localization signal

<400> 43
His Lys Ala Val Lys Arg
1 5

<210> 44
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> nuclear localization signal

<400> 44
Arg Leu Lys Ile Thr Lys Lys
1 5

<210> 45
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> putative protein kinase phosphorylation site

<400> 45
Arg Pro Arg Ser Phe Thr
1 5

<210> 46
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> protein kinase phosphorylation site consensus
sequence

<221> VARIANT
<222> 2, 4, 5
<223> Xaa = any amino acid

<400> 46
Arg Xaa Arg Xaa Xaa Ser Thr
1 5

<210> 47
<211> 24
<212> PRT
<213> Artificial Sequence

<220>
<223> consensus sequence

<221> VARIANT
<222> 3, 5, 8, 10, 12, 15, 16, 17, 19, 20, 21, 22
<223> Xaa = any amino acid

<400> 47
Ser Thr Xaa Pro Xaa Ser Pro Xaa Ser Xaa Pro Xaa Ser Pro Xaa Xaa
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Xaa Gly Xaa Xaa Xaa Xaa Ser Asp
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<210> 48
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> neuralized homology repeat domain

<400> 48
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